

[METHODS AND SYSTEMS FOR DETERMINING FORMATION PROPERTIES AND IN-SITU STRESSES]

Abstract

Systems and methods for determining a formation property related to formation strength and stresses are disclosed. A method for determining a formation strength includes obtaining radial formation property measurements at different wellbore pressures; generating a radial stress profile based on a formation model; generating a radial stress function from the radial stress profile; and comparing the radial formation property measurements with the radial stress function to determine the formation strength. A method for determining a formation stress profile includes deriving formation parameters from a formation radial profiling; obtaining formation log data that comprise formation density data; estimating formation stresses from the formation log data; and deriving a radial stress profile based on a formation model, the derived formation parameters, and the estimated formation stresses.